

# Management of Vascular Complications During TAVI

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# Disclosure

Speaker name:

....Marco Roffi.....

I have the following potential conflicts of interest to report:

X Institutional research grants from Abbott Vascular, Boston Scientific, Terumo, Medtronic, Biotronik

## FRANCE TAVI

- N=12,804, enrollment 2013-2015
- Rates of complications requiring surgical or percutaneous interventions
  - bleeding 8.9%
  - vascular complications 7.7%

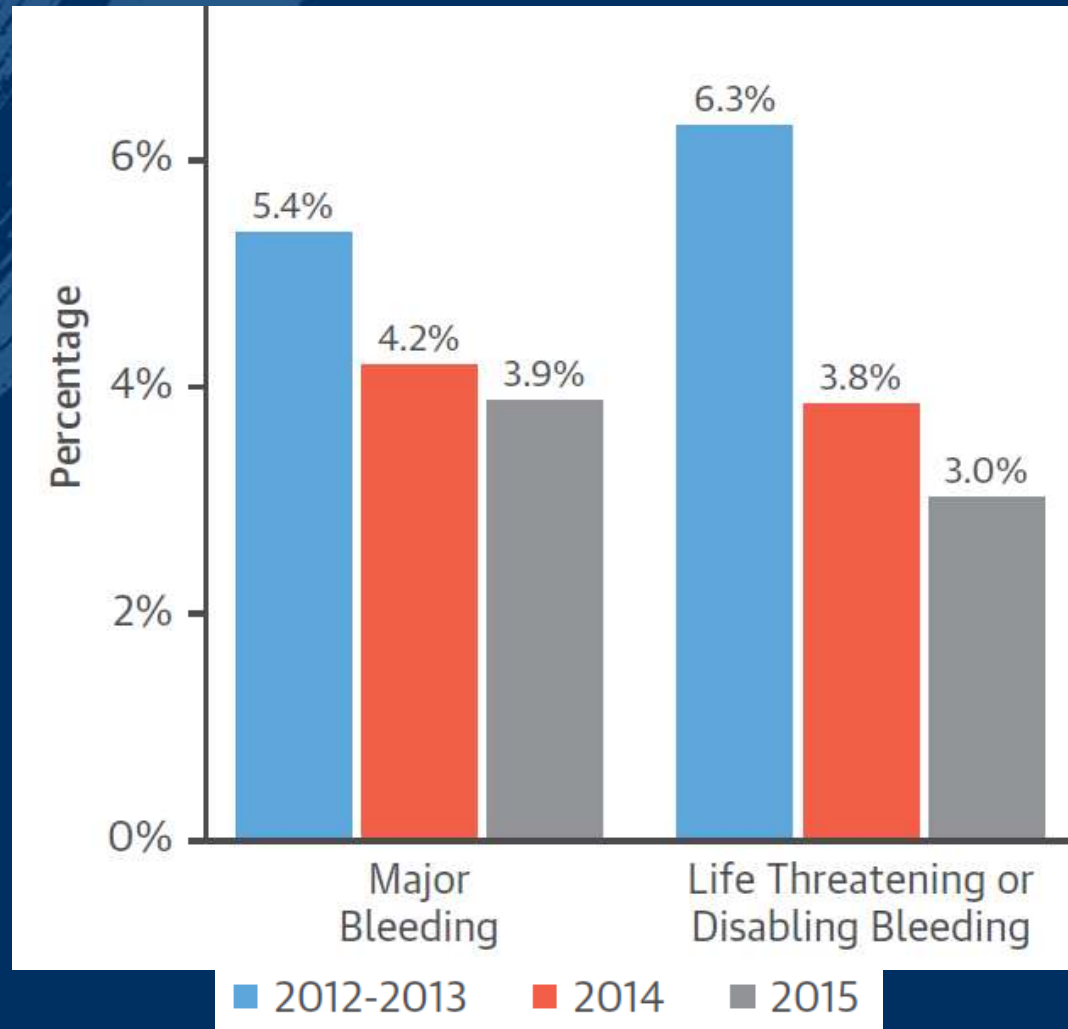
Auffret V et al. JACC 2017;70:42–55

## TAVI Vascular Complications in Germany

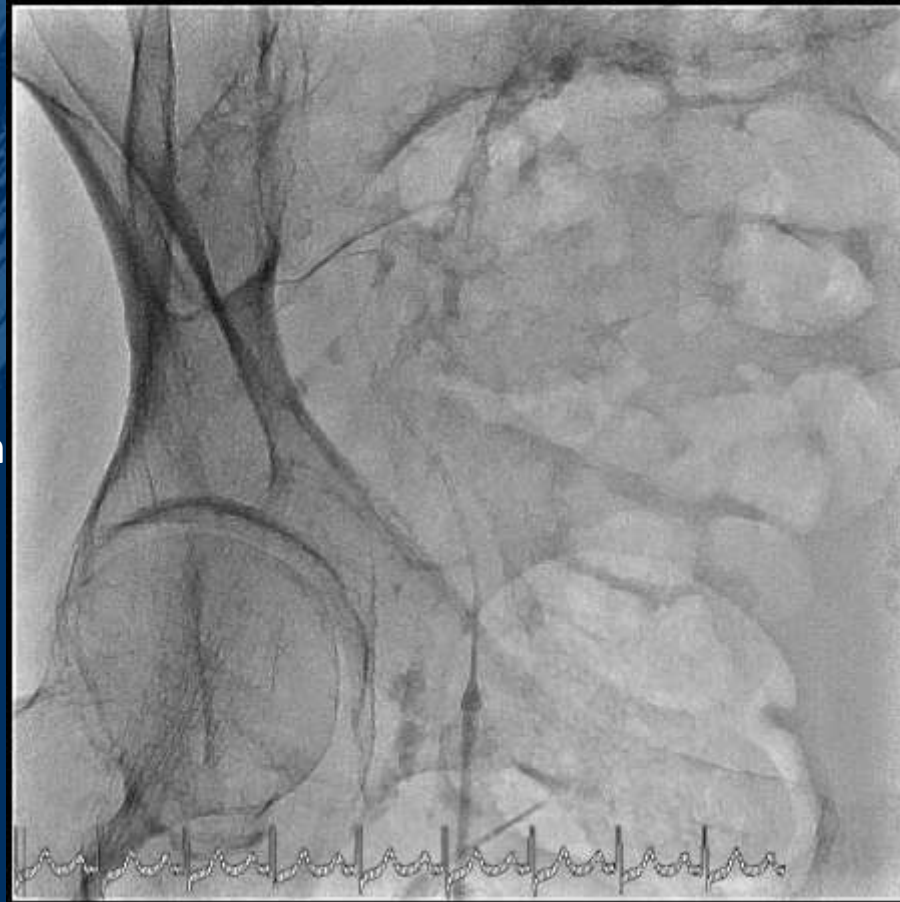
TV-TAVI			P-value
2014	2015	2016	TV-TAVI 2015 vs. 2016
<i>n</i> = 10 286	<i>n</i> = 13 132	<i>n</i> = 15 043	
8.3% (854)	8.5% (1117)	7.1% (1065)	<0.001

Gaede L et al. EHJ 2018; 39:667–75

# STS/ACC TVT Registry



# Preventing Prior to Managing Vascular Complications: Ultrasound-Guided Puncture



Access with  
micropuncture kit



**CT scan of the entire aorta mandatory for valve sizing  
and assessment of the ilio-femoral vasculature  
(vessel caliber, calcifications, tortuosity, location femoral bifurcation)**

**Main advantage of US**  
- Identify the bifurcation  
- Identify precisely the  
location of plaque  
or calcifications

# Oxford TAVI registry: Impact of Ultrasound-Guided Vascular Access

- 529 cases performed in 2015-2018
- Ultrasound-guidance independently associated with threefold reduction in vascular access complication (OR = 0.29, CI:0.15–0.55,  $p < .001$ ).

# Good Option to Prevent/Treat Complications: Contralateral Crossover Access

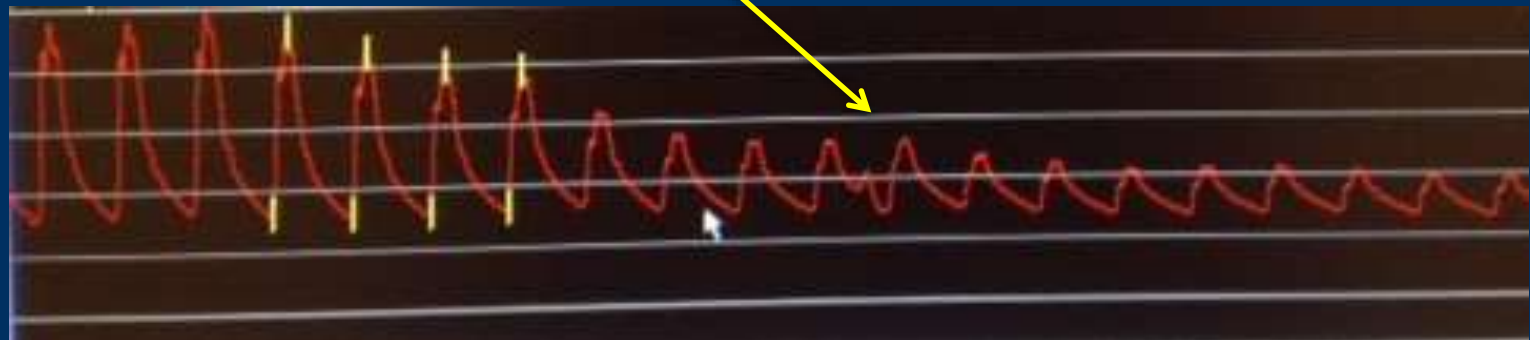
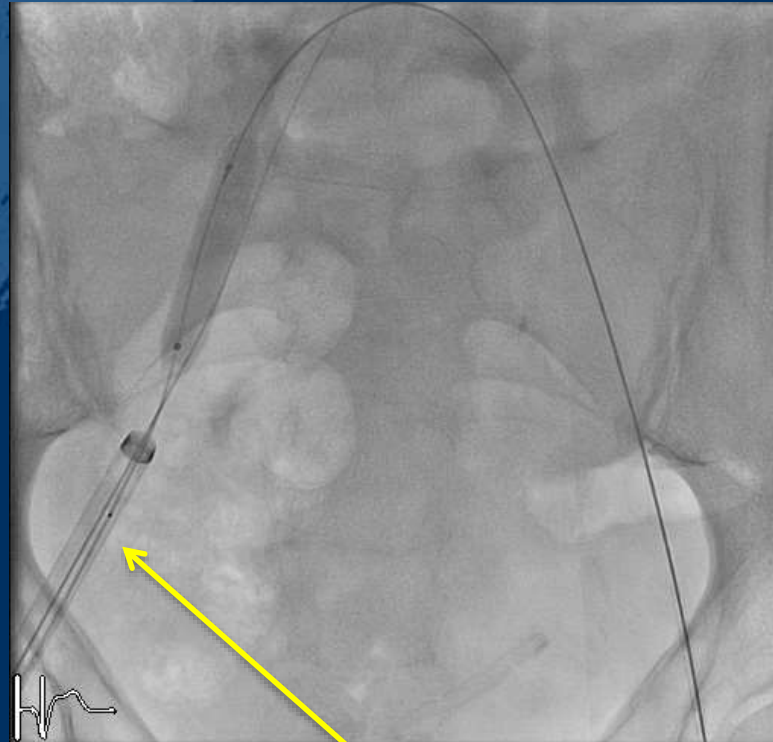
- Additional access needed anyway for angiographic control while positioning the valve
- In addition, crossover access allows for
  - Control angiogram of the large-bore puncture site
  - Rapid management of complications

# Good Option to Prevent/Treat Complications: Contralateral Crossover Access

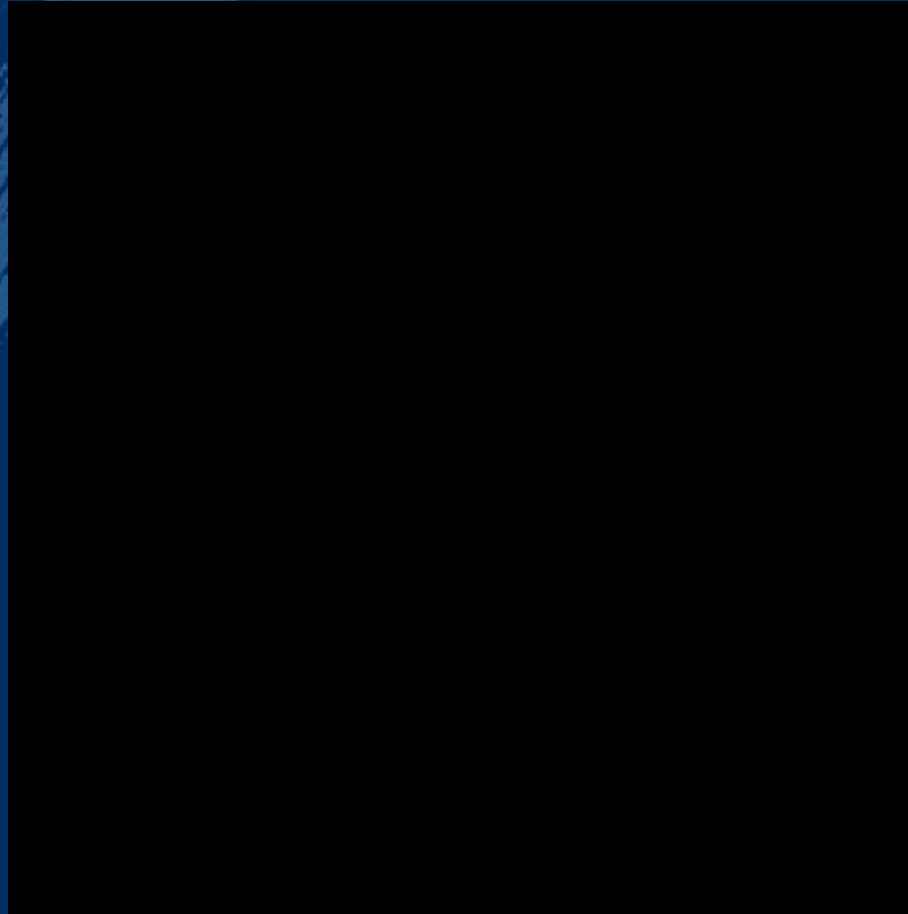
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- **Degrees of readiness varies according to the institutions**
  - No crossover access
  - Crossover + 0.014 inch / 0.018 wire in the ipsilateral SFA
  - Routine balloon inflation in the external iliac artery prior to sheath removal
  - Routine balloon inflation + wire



# Crossover Proximal Balloon Occlusion



# “Minor Leak”



# “Minor Leak”



Protamine + balloon occlusion (proximal or low pressure at the puncture level  
(depending also on the size of the balloon))

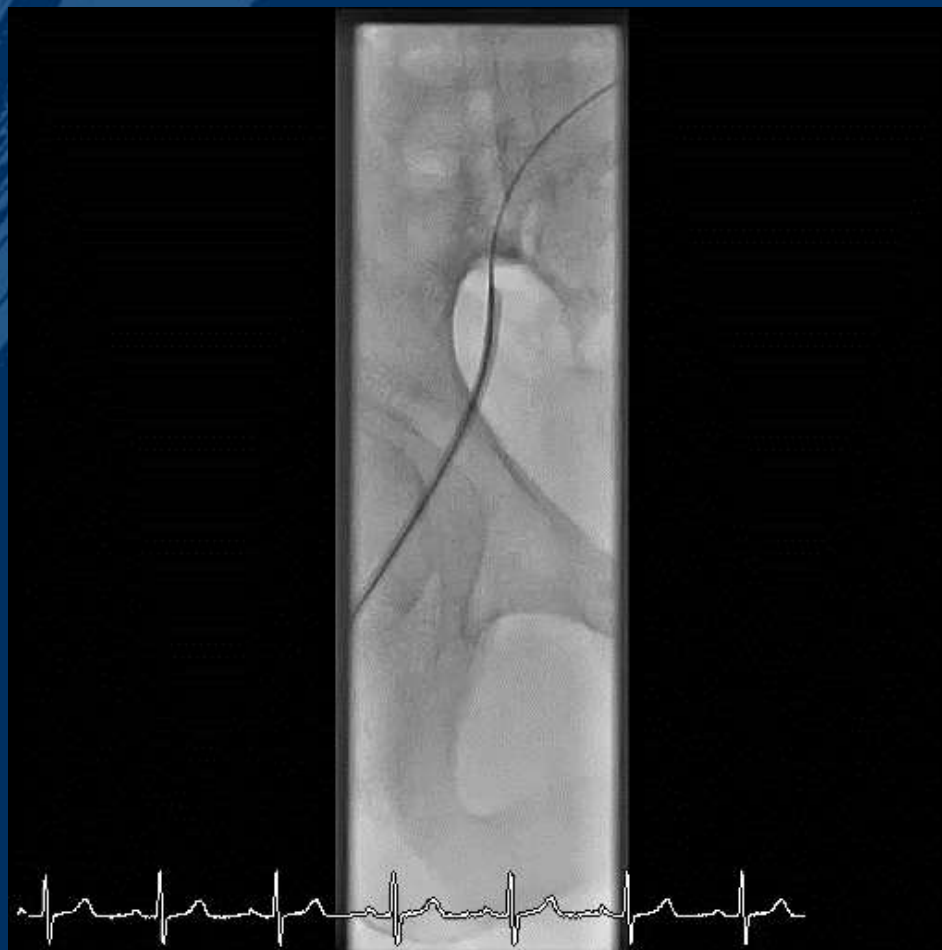
# Perforation



# Covered Stent



# Ilio-Femoral Occlusion



# Ilio-Femoral Occlusion



# Post stenting

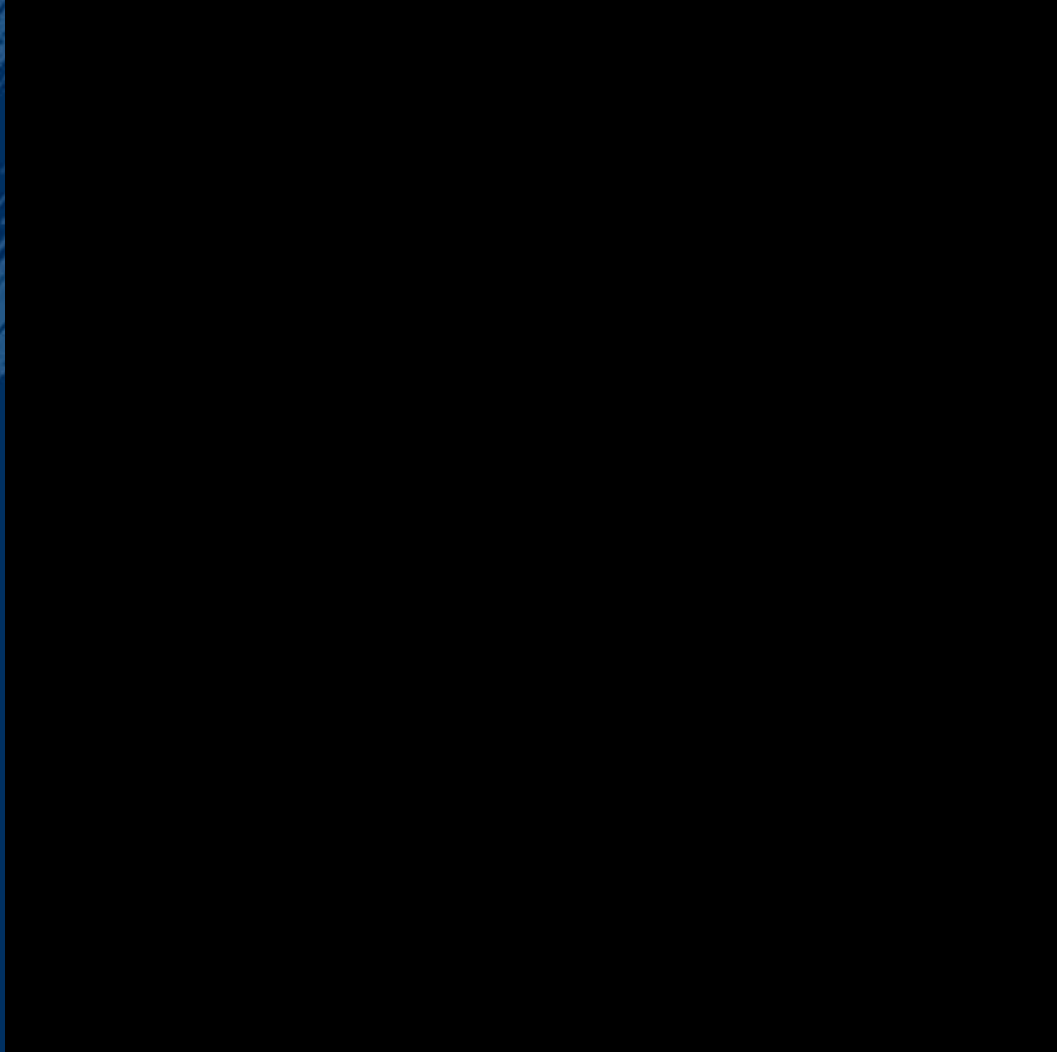




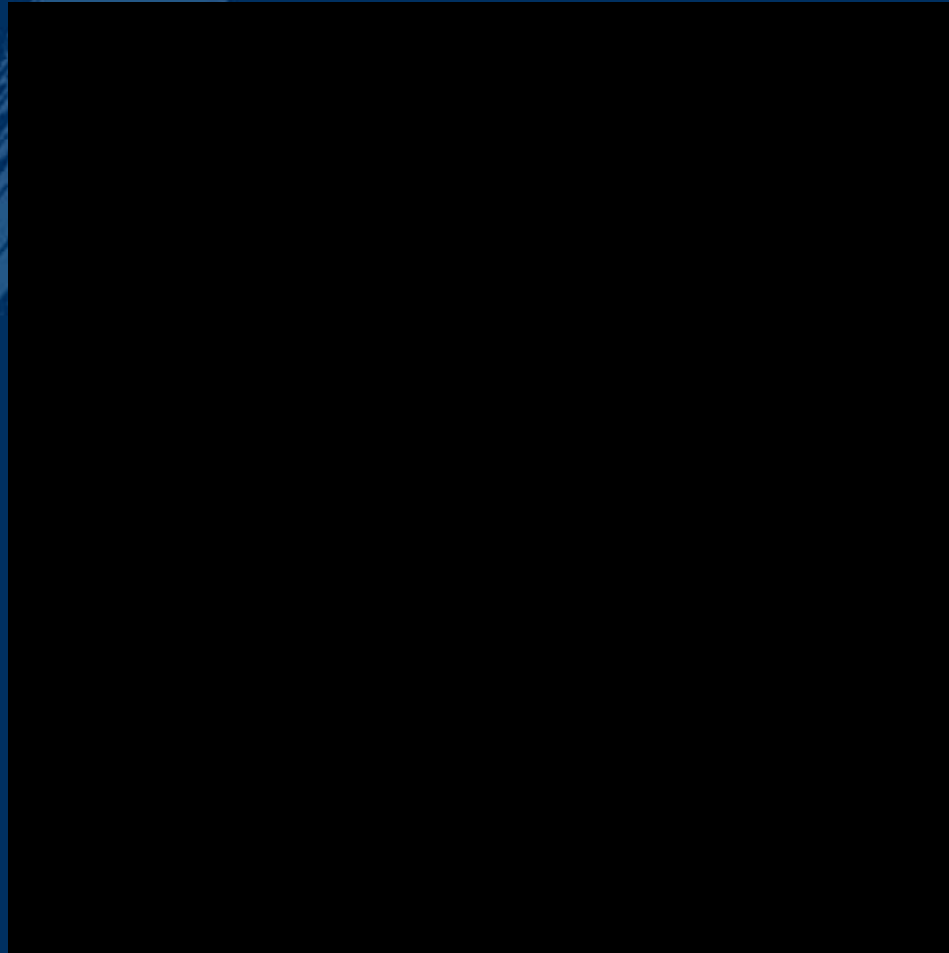
# Small Leak and Severe Stenosis Post Prostar?



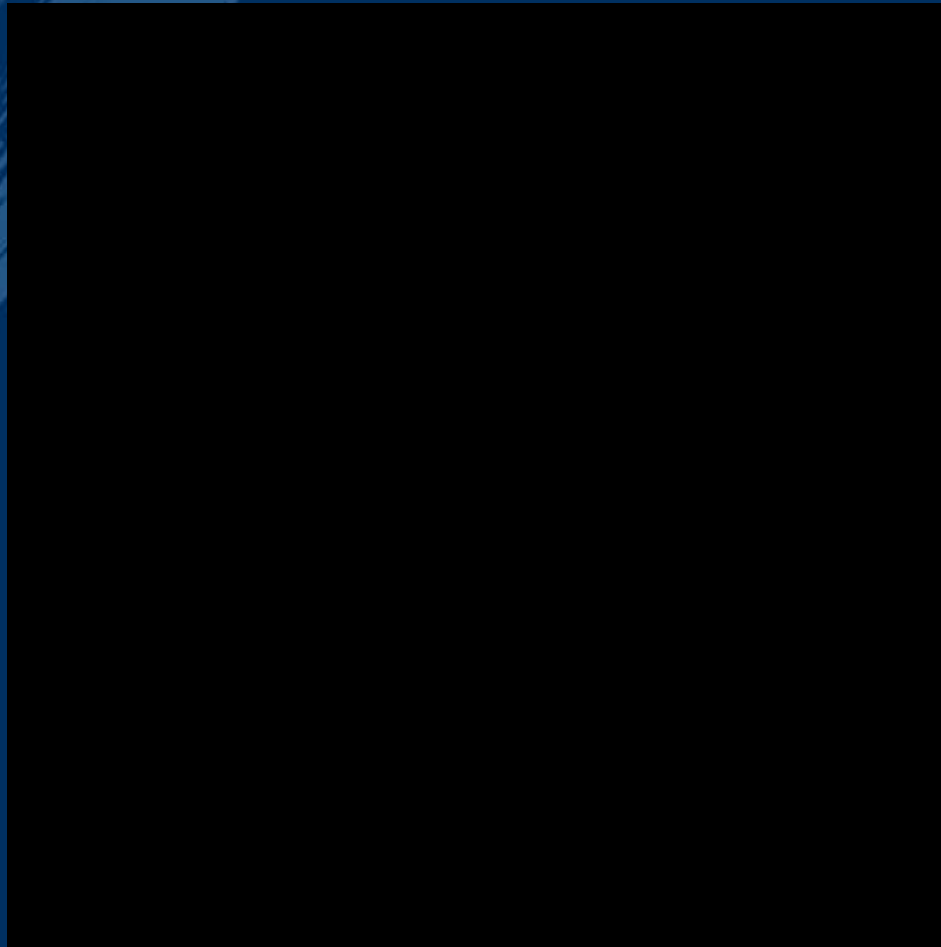
**Spasm!**



# Pseudoaneuvrysm



# Pseudoaneurysm: Covered Stent



# Sometimes you get scared for nothing.....



Very diseased CFA, high puncture site



Final result post TAVI

# Conclusions: Management of Vascular Complications During TAVI

- Incidence ↓
- Prevention
  - CT scan study
  - Ultrasound-guided puncture
  - Crossover access for hemostasis
- Treatment
  - Be ready (covered stents)
  - Be in good terms with your vascular surgeon because (very rarely) you might need him

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